

REMARKS

The Office Action of January 4, 2005, has been carefully reviewed, and in view of the above amendments and the following remarks, reconsideration and allowance of the pending claims are respectfully requested.

In the above Office Action, claims 1-7 were rejected under 35 U.S.C. § 112, second paragraph; claims 1 and 3 were rejected under 35 U.S.C. § 102(b) as being anticipated by *Rogers et al.* (U.S. Patent No. 4,195,699); claims 1 and 3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rogers et al.* in view of *Tuunanen* (U.S. Patent No. 5,934,387); claims 2 and 4-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rogers et al.* in view of *Tuunanen* and further in view of *Osga* (U.S. Patent No. 5,757,358). For at least the following reasons, Applicants traverse these rejections.

As set forth above, claim 1 has been amended to recite "measuring an operation of the apparatus...". This phrase is used to describe, in general, the measuring procedures that take place during the drilling operation. The specific criteria to be measured are determined by the control modes, as clearly set forth in claims 1 and 3. The Examiner has also identified "control strategies" as being vague and indefinite. When read and interpreted in view of the specification, it is clear that according to the control strategy of each control mode, one or more critical control criteria are measured and individual operating parameters are adjusted automatically in a manner determined by the control mode. Hence, Applicants submit that the meaning of a control strategy would be fully understood by one skilled in the art. In addition, the Examiner contends that the phrase "prioritized control mode is

weighted” is redundant. Applicants respectfully note that an important feature of the present invention is that there are two or more simultaneously active control modes and that the operator can weight one control mode which he considers to be the most important. The other control modes, which are not weighted, are still simultaneously active but have a lesser contribution to the overall operation compared to the weighted control mode. In contrast, if one control mode were prioritized but there was not relative weighting between the control modes, it is conceivable that the prioritized control mode would completely influence the drilling operation and the other control modes would not have any influence at all on the drilling operation. Hence, Applicants respectfully contend that having a prioritized control mode that is weighted relative to the other control modes is not redundant. Accordingly, in view of the above amendments and remarks, Applicants submit that the rejection of claims 1-7 under Section 112 has been obviated.

The present invention as recited in claims 1 and 3 includes an operating system with at least two simultaneously active control modes with different control strategies. In contrast, the primary reference upon which the Examiner, *Rogers et al.*, presents a control system having only two control parameters, namely drill thrust and drill speed, in order to **optimize the rate of penetration** of a drill, as mentioned for example at column 1, line 60, to column 2, line 12. Thus, there is only one aim, i.e., one control mode, in the cited control system. Moreover, the *Rogers* variable drill speed and thrust are changed so that one variable is always kept in a constant state while the other variable is changed incrementally, as mentioned at column 2, lines 58-66, and at column 6, lines 52-56. As such, the teaching of *Rogers* is in an opposite direction with respect to the present invention, wherein several control

modes are simultaneously active. Accordingly, since *Rogers* does not disclose or suggest an operating system with at least two simultaneously active control modes with different control strategies, as set forth in claims 1 and 3, Applicants respectfully submit that the anticipation rejection must be withdrawn.

The Examiner has also rejected claims 1 and 3 as being obvious over *Rogers* in view of *Tuunanen*. As discussed above, *Rogers* does not suggest an operating system with at least two simultaneously active control modes, and hence, it does not teach to prioritize one control mode over the other control modes so that the control strategy of the prioritized control mode is weighted. The secondary reference upon which the Examiner relies, *Tuunanen*, only discloses a method for measuring the position of a feed beam relative to a base of rock drilling equipment. Therefore, even combining the teaching of *Tuunanen* with the primary reference to *Rogers* would not suggest to one skilled in the art an operating system as recited in claims 1 and 3 of the present application, and withdrawal of the obviousness rejection is respectfully requested.

Finally, the Examiner has rejected claims 2 and 4-7 in over the above combination of prior art, and in further view of *Osga*, which discloses a method for making selections on a computer display. *Osga* does not suggest arranging an operating area of the shape of a plane geometrical polygon in a user interface. Nor does *Osga* suggest moving a control cursor in the operating area. Moreover, *Osga* does not suggest placing one control mode in each corner of the operating area having a polygon shape. Rather, the *Osga* selectable objects are shown as separate circles on the computer screen, and in *Osga* a cursor is moved between the separated objects, as shown in Figures 1-4. Accordingly, since *Osga* does not

disclose the features claimed in claims 2, 4, 5, 6 and 7 of the present application, the obviousness rejection based on the combination of *Rogers, Tuunanen* and *Osga* must be withdrawn.

CONCLUSION

In view of the above amendments and remarks, Applicants respectfully submit that the claims of the present application are now in condition for allowance, and an early indication of the same is earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference would be helpful in resolving any remaining issues pertaining to this application; the Examiner is kindly invited to call the undersigned counsel for Applicant regarding the same.

Respectfully submitted,

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